

What is Claimed is:

1. A method for controlling operation of an air conditioning system, comprising:  
a starting operation step for operating the air conditioning system until a frequency of a compressor reaches to a preset target frequency;  
a system stabilizing step for stabilizing operation of the system after the frequency of the compressor reaches to the preset target frequency; and  
a regular operation step for operating the system at a fixed level.

2. The method as claimed in claim 1, wherein the system stabilizing step includes;  
a first step for regulating opening of the expansion device, to increase the degree of superheat of refrigerant at an outlet of the compressor, comparing a temperature change rate of the condenser with respect to time to a preset temperature change rate, and  
a second step for, if the temperature change rate of the condenser with respect to time is lower than the preset temperature changer rate, comparing the degree of superheat of refrigerant at an outlet of the compressor to a preset degree of superheat of refrigerant at an outlet of the compressor, and opening the opening of the expansion device to a preset state, if the degree of superheat of refrigerant at an outlet of the compressor is higher than the preset degree of superheat of refrigerant at an outlet of the compressor.

3. The method as claimed in claim 2, wherein the second step further includes the steps of;

measuring the temperature change rate with respect to time at the outlet of the compressor, if the degree of superheat of refrigerant at an outlet of the compressor is lower than the preset degree of superheat of refrigerant at an outlet of the compressor, upon

comparison of the degree of superheat of refrigerant at an outlet of the compressor to the preset degree of superheat, and

opening the opening of the expansion device to a preset state, determining that an adequate time period required for stabilizing the system is passed, if the temperature change rate with respect to time at the outlet of the compressor is lower than the preset temperature change rate.

4. The method as claimed in claim 2, wherein the temperature of the condenser is measured at a part of a pipeline passed through the condenser, temperatures before and after which part are constant.

5. The method as claimed in claim 2, wherein the temperature of the condenser is measured at a part of a pipeline on an inlet side of the condenser.

6. The method as claimed in claim 2, wherein the temperature of the condenser is measured at a part of a pipeline on an outlet side of the condenser.

7. The method as claimed in claim 3, wherein the temperature of the compressor is measured at a part of a pipeline refrigerant discharged from the compressor flows therethrough.

8. The method as claimed in claim 1, wherein the system stabilizing step includes;  
a first step for regulating the opening of the expansion device to increase the degree of superheat of refrigerant at an outlet of the compressor, and comparing the temperature

change rate of the condenser with respect of time to a preset temperature change rate, and opening the opening of the expansion device to a first state, if the temperature change rate of the condenser with respect to time is lower than the preset temperature changer rate, and

a second step for, after the first step, opening the opening of the expansion device to a second state if the degree of superheat of refrigerant at an outlet of the compressor is higher than the preset degree of superheat of refrigerant at an outlet of the compressor upon comparison of the degree of superheat of refrigerant at an outlet of the compressor to the preset degree of superheat of refrigerant at an outlet of the compressor.

9. The method as claimed in claim 8, wherein the second step further includes the steps of;

measuring the temperature change rate with respect to time at the outlet of the compressor, if the degree of superheat of refrigerant at an outlet of the compressor is lower than the preset degree of superheat of refrigerant at an outlet of the compressor, upon comparison of the degree of superheat of refrigerant at an outlet of the compressor to the preset degree of superheat, and

opening the opening of the expansion device to a preset state, determining that an adequate time period required for stabilizing the system is passed, if the temperature change rate with respect to time at the outlet of the compressor is lower than the preset temperature change rate.

10. The method as claimed in claim 8, wherein the temperature of the condenser is measured at a part of a pipeline passed through the condenser, temperatures before and after which part are constant.

11. The method as claimed in claim 8, wherein the temperature of the condenser is measured at a part of a pipeline on an inlet side of the condenser.

12. The method as claimed in claim 8, wherein the temperature of the condenser is measured at a part of a pipeline on an outlet side of the condenser.

13. The method as claimed in claim 1, wherein the system stabilizing step includes;  
a first step for regulating opening of the expansion device, to increase the degree of superheat of refrigerant at an outlet of the compressor, comparing a temperature of the condenser to a preset temperature, and

a second step for, if the temperature of the condenser is higher than the preset temperature change rate, comparing the degree of superheat of refrigerant at an outlet of the compressor to a preset degree of superheat of refrigerant at an outlet of the compressor, and opening the opening of the expansion device to a preset state, if the degree of superheat of refrigerant at an outlet of the compressor is higher than the preset degree of superheat of refrigerant at an outlet of the compressor.

14. The method as claimed in claim 13, wherein the second step further includes the steps of;

measuring the temperature change rate with respect to time at the outlet of the compressor, if the degree of superheat of refrigerant at an outlet of the compressor is lower than the preset degree of superheat of refrigerant at an outlet of the compressor, upon comparison of the degree of superheat of refrigerant at an outlet of the compressor to the

preset degree of superheat, and

opening the opening of the expansion device to a preset state, determining that an adequate time period required for stabilizing the system is passed, if the temperature change rate with respect to time at the outlet of the compressor is lower than the preset temperature change rate.

15. The method as claimed in claim 13, wherein the temperature of the condenser is measured at a part of a pipeline passed through the condenser, temperatures before and after which part are constant.

16. The method as claimed in claim 13, wherein the temperature of the condenser is measured at a part of a pipeline on an inlet side of the condenser.

17. The method as claimed in claim 13, wherein the temperature of the condenser is measured at a part of a pipeline on an outlet side of the condenser.

18. The method as claimed in claim 1, wherein the regular operation step includes the step of maintaining the opening of the expansion device to a preset state for operating the system as the fixed level.

19. The method as claimed in claim 2, wherein the regulation of opening of the expansion device is made by regulating opening of an electronic linear expansion valve.